Appendix 2-F

Potential Interim Service on the Initial Construction Segment

Potential Interim Service

The Revised 2012 Business Plan and the FRA grant agreements both identify a potential interim service option (also called an interim use option or scenario) that could provide early service benefits to the traveling public by allowing for Amtrak *San Joaquin* intercity operation using the HST infrastructure on an interim basis if HST service is delayed. This scenario, also referred to in this appendix as the non-electrified scenario or diesel thru-service, is introduced in Chapter 2, "Alternatives" and addressed in Standard Response FB-Response-GENERAL-13 located in Volume IV, Chapter 16, "Standard Responses," and again in Volume V, Chapter 34, "Standard Responses" of the Fresno to Bakersfield Final EIR/EIS.

This Appendix contains an environmental impact analysis of this potential non-electrified (diesel) Amtrak *San Joaquin* interim use scenario. This analysis includes construction impacts and operations impacts. Because this interim use scenario would be on the track analyzed in the environmental documents already, construction impacts that stem from ground disturbance or "footprint" impacts (e.g., biological resources, agricultural land conversion, etc.) would be the same for HST service (already evaluated in both the MF EIR/EIS and this FB EIR/EIS) as this interim use service. These construction impacts are discussed below, nevertheless, for completeness so all analysis is contained in one location (i.e., this appendix); the analysis below also provides a more detailed discussion of the information summarized in Standard Response FB-Response-GENERAL-13.

Background Information

The interim service, if it operates at all, would involve (for purposes of this analysis)[1] five of the current six daily roundtrip Amtrak *San Joaquin* trains[2] shifting to/from its current BNSF track just south of the Madera Amtrak station, running on the HST track infrastructure, then shifting back to/from the ICS track infrastructure north of Bakersfield generally at the location of the Shafter HMF site. This would be done via cross-over track at these locations that would be constructed within the construction footprint evaluated in the MF EIR/EIS and this FB EIR/EIS. See Figures 1 and 2 at the end of this Appendix. This approach would allow a passenger to travel from Sacramento to Bakersfield with a type of "express" San Joaquin service that would travel at higher speeds and have a single stop in Fresno between Madera and Bakersfield. The civil infrastructure, track, and associated roadway modifications would be the same as identified in the Merced to Fresno and Fresno to Bakersfield EIR/EISs. Signal and communications systems would be installed that would meet FRA requirements for Positive Train Control. The Merced to Fresno and Fresno to Bakersfield EIR/EISs analyzed the potential impacts of an Overhead Contact System necessary to deliver electric power for HST service which would not be required under the non-electric scenario. The non-electric scenario is assumed to use diesel locomotives with Tier IV engine[3] similar to the F125 at 4,700 HP and five cars which are anticipated to be used for *San Joaquin* trains in the future. Non-electric train speeds on the ICS would be between 90 and 120 mph.

[1] The operating conditions been factored into the analyses described in this appendix are reasonable assumptions at this point in time, but could be refined by the operator if the service is implemented. As described elsewhere, the Authority would not be the operator of such service.

[2] The 2013 California State Rail Plan discusses expanded *San Joaquin* service from the current 6 round-trips per day to between 8 and 11 round trips by 2018. However, a significant amount of infrastructure investment would be necessary on the BNSF line between Martinez and Bakersfield to achieve these service frequencies. These infrastructure investments would be approved and funded, if at all, by another government entity and are not yet approved or environmentally cleared.

[3] This assumption about Tier IV locomotives is based on the industry wide shift to those vehicles which is happening over the course of several years. New vehicles being manufactured are to that standard.

Transportation

Construction Impacts. Construction-related traffic impacts for non-electrified thru-service would be somewhat less than those reported in Sections 3.2 of the Merced-Fresno FEIR/EIS and the Fresno-Bakersfield Revised DEIR/Supplemental DEIS (CHSRA and FRA 2012a and 2012b) because the tracks would not be electrified at the time the interim use would commence resulting in a shorter construction period; the length of the ICS is also shorter. However, most heavy construction, which would cause the greatest number of temporary road closures and detours, is associated with clearing the HST right of way, constructing the system foundation, structures, railroad bed, installing the rails, and constructing the downtown HST stations. This heavy construction would be the same whether the tracks are electrified or not, although would not involve downtown HST stations for the interim service scenarios; the length of the ICS is also shorter. Therefore, construction-related traffic impacts for non-electrified service and the HST System would be similar.

Operational Impacts. Train operations on the ICS would require roadway modifications including road terminations, rerouting, and overcrossings/undercrossings. Appendix 2-A in the environmental documents for Merced to Fresno and Fresno to Bakersfield sections of the HST project (CHSRA and FRA 2011, 2012a, and 2012b) provide a list of roadways that would be affected by the HST from Merced to Bakersfield and the type of modification that would be necessary to operate the ICS. Changes in vehicle movements and flow and property access as a result of these roadway modifications are described in Section 3.2 (Transportation) in the environmental documents for Merced to Fresno and Fresno to Bakersfield sections. These impacts (operations of the roadway network) all relate to construction of the rail alignment, which would be the same for the interim use option as those described for operation of the HST because the same infrastructure would be used. As for stations, traffic from passengers arriving at/departing from the Fresno and Bakersfield stations would be less because of anticipated lower ridership than evaluated in the Fresno to Bakersfield and Merced to Fresno RDEIR/SDEIS documents.[4] Related, benefits from reduced regional congestion as inter-regional trips divert from auto to the ICS also would be lower, similar to such lower benefits in the early stages of full HST service as ridership ramps up.

Although non-electrified thru-service could reduce passenger rail travel time between the Bay Area and Los Angeles, the reduction would be small compared to HST service. Therefore, it is unlikely that ridership on the non-electrified thru-service would be as great as ridership projections for HST service. As a result, impacts to the local road network in Fresno related to vehicle traffic going to and from the Fresno station, which would not be fully built out for the interim use option, would be less than the traffic impacts predicted for this station in the environmental documents for the Merced to Fresno and Fresno to Bakersfield HST sections (CHSRA and FRA 2011, 2012a, and 2012b).

Noise and Vibration

Construction Impacts. ICS construction noise and vibration impacts would be the same as described in Sections 3.4 (Noise and Vibration) of the Merced-Fresno FEIR/EIS and the Fresno-Bakersfield Revised DEIR/Supplemental DEIS (CHSRA 2012a and 2012b) except the duration of

[4] The Final EIR/EIS evaluates impacts based upon a level of HST ridership that is much higher than the current Amtrak San Joaquin ridership. For example, HST ridership evaluated was based on as many as four HST trains *per hour* running and stopping at stations in this corridor. The interim service analyzed here would divert a portion of the Amtrak San Joaquin trains onto the ICS; it would not provide expanded service (i.e., would still be based on six round-trips *per day*, five on the ICS). Accordingly, even increased ridership on the Amtrak *San Joaquin* trains as a result of faster service on the ICS will be less than that analyzed for HST service in the EIR/EIS.

construction noise would be shorter since the track would not be electrified; the length of the ICS is also shorter. The duration of noise associated with construction of the Fresno station would also be shorter since this station would not be completely built out for non-electrified thru-service.

Operational Impacts. For the noise analysis, the noise level for the non-electrified passenger train was assumed to be 90 dBA Lmax at 100 feet throughout the length of the ICS. This noise level is based on 40 CFR 201.12(b) requirements for maximum noise emission standards for interstate rail carriers, so the assumption is reasonable. Using this noise emission level, noise levels were modeled at 409 receptor sites between Fresno and Rosedale in the Bakersfield metropolitan area that are representative of the range of sensitive receptors present along the full ICS. These receptor sites represent all land use types in the south San Joaquin Valley that have sensitive noise receptors, including densely populated urban areas, suburbs, small towns, rural residential neighborhoods, and individual rural homes and enclaves. These receptor sites were residences and institutional facilities where people are sensitive to noise such as schools, churches, and rest homes. The same receptors used for the analysis of HST noise impacts were used for the non-electrified passenger train service. At all receptor sites but one, the noise projected for the HST would be greater than the noise projected for a non-electrified passenger train operating at 120 mph. At that one receptor site, the noise projected for the HST and the non-electrified passenger train would be the same. Therefore, noise impacts to sensitive receptors along the ICS would be less for a non-electrified passenger train than for the HST.

Other operational noise impacts related to ridership, such as noise from vehicle travel to/from stations, would be less under the interim service scenarios than as evaluated in the Merced to Fresno and Fresno to Bakersfield environmental documents. The noise analysis for the HST included an assessment of impacts caused by vehicles traveling to and from the HST stations in Madera and Fresno. As described in Section 3.4 of the EIR/EISs for the Merced to Fresno and Fresno to Bakersfield sections of the HST System (CAHSRA and FRA 2012a and 2014), those impacts were found to be less than significant under NEPA and CEQA. Because there would be fewer passengers using non-electrified thru-service, the noise impacts caused by vehicle traffic related to the non-electrified thru-service would be less than those reported in the Merced to Fresno and Fresno to Bakersfield environmental documents.

Ground-borne vibration impacts inside vibration-sensitive buildings are defined by the vibration velocity level, expressed in terms of VdB, and the number of vibration events per day of the same kind of source. The FRA provides guidelines to assess the human response to different levels of ground-borne vibration, as shown in Table 3.4-6 of the EIR/EIS documents. These levels represent the maximum vibration level of an individual train pass-by. A vibration event occurs each time a train passes the building or property and causes discernible vibration. "Frequent Events" are more than 70 vibration events per day, and "Infrequent Events" are fewer than 70 vibration events per day. For non-electrified passenger train use of the ICS, the infrequent events vibration criteria were used.

A GIS analysis was conducted to calculate the number of sensitive receptors that would be impacted by Amtrak interim use of the ICS. Nine sensitive receptors would be impacted by such use, but such impacts would be less than significant after mitigation (such mitigation would be applied to the HST infrastructure on a receptor by receptor basis). For seven of the receptors, the mitigation would involve installing high resilience fasteners to fasten the rails to the rail ties for a linear distance of between 88 feet and 242 feet along the rail line at the location of each receptor. For the other two receptors, the mitigation would involve installing ballast mats under the rail ties for a linear distance of between 265 feet and 278 feet along the rail line at the location of each receptor. These fasteners and mats can be retrofit into the HST infrastructure prior to the commencement of diesel service on the ICS, if such service ever occurs.

Regional Air Emissions

Construction Impacts. Construction of the ICS would use various diesel fueled off-road construction equipment, trucks associated with material hauling, workers commuting to the project site, and fugitive dust emissions associated with construction activities. These emissions are a subset of the construction emissions estimated for both the Merced to Fresno and Fresno to Bakersfield sections of the HST System. Using the same methods employed in the Merced to Fresno and Fresno to Bakersfield EIR/EISs, the emissions were calculated using CARB's latest OFFROAD and EMFAC emission models as well as fugitive dust emissions based on U.S. EPA's AP-42 emission factors. Construction-related emissions of several criteria pollutants over multiple years exceed both the San Joaquin Valley Air Pollution Control District (SJVAPCD) CEQA significance thresholds and the General Conformity de minimis thresholds. These pollutants include reactive organics (ROG) (which are the same as VOCs) and nitrogen oxides NOx. The emissions of particulate matter less than 10 and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$) exceed the SJVAPCD thresholds only and not the General Conformity thresholds, but these emissions are generally less than was disclosed in the environmental documents for Merced to Fresno and Fresno to Bakersfield because of the ICS results in less construction and consequently fewer emissions. Consistent with the mitigation measures outlined in the environmental documents for Merced to Fresno and Fresno to Bakersfield, efforts would be made to reduce the emissions from operation of the construction equipment and material hauling. Any remaining emissions above the thresholds after implementation of reductions to the equipment and vehicles would be offset to net zero through a Voluntary Emission Reduction Agreement entered into with the SJVAPCD to offset the emissions within the San Joaquin Valley Air Basin in the same year that they occur.

Operational Impacts. For the air quality analysis, emissions from the locomotives were estimated based on the off-road equipment category for exhaust PM_{10} using Tier 4 engine performance standards. The ICS would be approximately 120 miles long so there would be 1,200 miles of travel per day for the five roundtrip non-electrified passenger trains on this section. For the thru-running scenario this is a conservative estimate as these roundtrips already exist for Amtrak *San Joaquin* trains and represent only a horizontal displacement (from current Amtrak/BNSF tracks to the HST tracks) of the emissions. Such displacement does not affect the regional emissions (only the localized health risk emissions, which is discussed below) as compared to the existing condition. The maximum pounds per day for each train passing a receptor was multiplied by the number of trains and the number of days in a year and amortized over a year to determine the annual average emission rate. Table 5 indicates that the criteria mass emissions are less than the significance threshold for non-permitted equipment and activities. Those criteria are 100 tons per year for CO, 10 tons per year for NO_x and VOC, and 15 tons per year for PM_{10} and $PM_{2.5}$. Since the emissions from the non-electrified passenger train operation shown in Table 2F-1 are less than the thresholds of significance, their use of the HST tracks would not cause or contribute substantially to exceedances of ambient air quality standards.

Table 2F-1
ICS Non-electrified Passenger Train Emissions

Pollutant	Emission Factor (grams/break horsepower-hour)	Emissions (grams/mile/trip)	Average Emission Rate (grams/second/mile)	Mass Emissions (tons/year)
Volatile Organic Hydrocarbons (VOC)	0.15	11.09	0.00128	4.86
Nitrogen oxides (NO_x)	0.3	22.56	0.00261	9.88
Carbon Monoxide (CO)	1.5	112.8	0.01306	49.41
Particulate Matter 10 microns in diameter or less (PM_{10})	0.03	2.26	0.00026	0.99
Particulate Matter 2.5 microns in diameter or less ($PM_{2.5}$)	0.03	2.26	0.00026	0.99

Notes:
1. Two locomotives each with 4,700 horsepower. It is assumed that train is operating at full power.
2. Train operates 5 roundtrips/day on a 120-mile long track for 365 days/year.
3. Train operates at 125 mph and covers a mile in 28.8 seconds.
4. Emission factors are based on Tier 4 locomotive emission standards.

The air quality analysis for the HST included an assessment of impacts caused by emissions from vehicles traveling to and from the HST stations in Madera and Fresno. As described in Section 3.3 of the environmental documents for the Merced to Fresno and Fresno to Bakersfield sections of the HST (CAHSRA and FRA 2011, 2012a, and 2012bb), those impacts were found to be less than significant under NEPA and CEQA. Because there would be fewer passengers using non-electrified thru-service, the air quality impacts caused by vehicle traffic related to the non-electrified thru-service would be less than those reported in the Merced to Fresno and Fresno to Bakersfield environmental documents.

Localized Emissions/Health Risks. The locomotives for the non-electrified passenger trains emit diesel particulate matter that is classified as a toxic air contaminant (TAC) by the California Air Resources Board. Diesel exhaust is a complex mixture that includes hundreds of individual constituents. Under California regulatory guidelines, diesel particulate matter is used as a surrogate measure of carcinogen exposure for the mixture of chemicals that make up diesel exhaust as a whole. In order to evaluate the impacts of diesel particulate emissions on nearby sensitive receptors, a health risk assessment was conducted consistent with the guidelines of the California Office of Environmental Health Hazard Assessment (OEHHA) (OEHHA 2012, 2003) and guidelines published by the SJVAPCD for determining local community risks and hazards.

A health risk assessment characterizes the relationship between the magnitude of exposure and the nature and magnitude of adverse health effects that may result from such exposure. For purposes of calculating exposure criteria to be used in risk assessments, adverse health effects are classified into two broad categories: cancer and non-cancer endpoints. Toxicity values used to estimate the likelihood of adverse effects occurring in humans at different exposure levels are identified as part of the toxicity assessment component of a risk assessment.

Potential sensitive receptors for the health risk assessment were characterized as residents as this is the population with the most conservative exposure factors. The exposure parameters

used for estimating excess lifetime cancer risks and chronic non-cancer Hazard Index (HI) for all potentially exposed populations were obtained using risk assessment guidelines from OEHHA. The analysis was done for the inhalation pathway assuming that sensitive receptors would be exposed to emissions from non-electrified passenger trains 350 days/year 24 hours/day for 70 years.

Concentrations of diesel particulate matter from non-electrified passenger trains were simulated using the U.S. EPA regulatory approved dispersion model called AERMOD. AERMOD requires meteorological data as an input into the model. For this assessment, the Fresno Yosemite International Airport meteorological dataset was used since according to SJVAPCD Guidance it represents worst-case meteorological conditions for wind speed. The terrain for purposes of modeling was assumed to be flat, because it is flat along the ICS.

Receptors were modeled using tiered fenceline grids around a one-mile segment. Ninety-two adjacent volume sources from the train were modeled for a one-mile track segment. This is long enough segment of influence to assess the extent of dispersion of rail emissions from a passing train. A sensitivity analysis was conducted to determine whether a one-mile track segment was of reasonable length to capture the impacts to a sensitive receptor. The sensitivity analysis added an additional 0.1 mile length of volume sources to the air dispersion model. The concentration of the original segment with the 0.1 mile segment extension at the maximum modeled receptor was determined. The percent contribution to the concentration of this 0.1 mile section compared to the concentration of the originally modeled one-mile segment was calculated to be less than 1.5%. Further segment extensions will have even smaller contributions. Given this small contribution from this additional rail segment extension, further extension of the modeled rail segment will not substantially impact the concentration at the receptor. It would not increase the health risk above the 10 in one million threshold. Therefore, based on this sensitivity analysis, it can be concluded that the one-mile segment of rail was an appropriate length to model for the analysis.

The estimated excess lifetime cancer risk for child daycare was adjusted using the age sensitivity factors (ASFs) recommended by OEHHA (OEHHA 2009). This approach accounts for an "anticipated special sensitivity to carcinogens" of infants and children. Cancer risk estimates are weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to two years of age and by a factor of three for exposures that occur from two years through 15 years of age. No weighting factor (i.e., an ASF of one, which is equivalent to no adjustment) was applied to ages 16 to 70 years.

Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific cancer potency factor (CPF).

The potential for exposure to result in chronic non-cancer effects is evaluated by comparing the estimated annual average air concentration (which is equivalent to the average daily air concentration) to the chemical-specific non-cancer chronic reference exposure levels (RELs). When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient (HQ). To evaluate the potential for adverse chronic non-cancer health effects from simultaneous exposure to multiple chemicals, the HQs for all chemicals are summed, yielding an HI. For evaluation of non-electified diesel train service on the ICS, diesel particulate matter (DPM) is the only pollutant evaluated for chronic non-cancer risks because it is the only potentially hazardous pollutant that would be emitted from such service; therefore the HQ for DPM is the same as the overall HI.

The highest incremental increase in cancer risk and chronic non-cancer effects calculated for the non-electrified passenger train would be to a hypothetical resident located within about 150 feet of the track who spent 70 years of their life 350 days/year, 24 hours/day at this location. The incremental increase in cancer risk at this point is 7.5 in a million, which is less than the significance threshold of 10 in a million. The increase in HI for chronic non-cancer effects is 0.0014 which is less than the significance threshold of 1. Other receptors located further away from the track have an even lower incremental increase in cancer and chronic non-cancer risk. Therefore, the use of the HST tracks by a non-electrified passenger train in the San Joaquin Valley would not have a significant health impact on sensitive receptors.

Electromagnetic Fields and Electromagnetic Interference

Construction Impacts. Construction impacts from electromagnetic fields (EMFs) and electromagnetic interference (EMIs) would be the same for ICS construction as described in Sections 3.5 of the Merced to Fresno FEIR/EIS and the Fresno to Bakersfield Revised DEIR/Supplemental DEIS (CHSRA 2012a and 2012b) except the duration of construction-related EMF/EMI impacts would be shorter as the track would not be electrified.

Operational Impacts. Non-electrified passenger train operations would have no EMF impacts, as the trains would be operated on diesel and no HMF would be built for its operation. The only possible EMI impact associated with non-electrified passenger train service on the ICS is interference between radio equipment used by the train for communications and radio systems in nearby residences, schools, and businesses. Most non-electric freight and passenger trains use radio communications.

Public Utilities

Construction Impacts. The construction impacts on public utilities and energy for the ICS are the same as or less than the impacts described within Section 3.6 of the Merced to Fresno FEIR/EIS and the Fresno to Bakersfield Revised DEIR/Supplemental DEIS (CHSRA 2012a and 2012b). ICS impacts for an interim use on public utilities and energy would not differ from those disclosed in the Merced to Fresno and Fresno to Bakersfield environmental documents because utility interference and relocation impacts are related to the construction/footprint, which is unchanged from those documents. For completeness, however, those footprint conflict issues for the ICS are discussed below.

A number of high risk utilities related to petroleum, natural gas, and electrical facilities would have to be relocated for the construction of the HST infrastructure on which non-electrified passenger train service would run along the ICS. These high risk utilities are identified in Table 2F-2. The Authority would work with utility owners to identify the most suitable relocation procedures for pipelines, power lines, and electrical substations. In compliance with state law (California Government Code Section 4216), the construction contractor would use a utility locator service and manually probe for buried utilities within the construction footprint prior to initiating ground disturbing activities. This would avoid accidental disruption of utility services. Consistent with standard practice, utility-related facilities would be relocated prior to the disconnection of the original facility to alleviate the potential for service disruptions. Where overhead transmission lines cross the alignment, the Authority and the utility owner may determine that it is best to place the line underground. In this case, the transmission line would be placed in a conduit. Where existing underground utilities, such as gas and petroleum pipelines, cross the alignment, these utilities would be placed in a protective casing.

Table 2F-2
ICS Impacts on High Risk Utilities

Utility Type	Owner	Number of Conflicts	Total
Petroleum	Kinder Morgan	5	15
	Shell Oil Company	2	
	Unknown	8	
Natural Gas	PG&E	9	37
	Sempra Energy	13	
	Unknown	15	
Electrical Transmission Lines	PG&E	36	37
	AEP Texas Central Co.	1	
Electrical Substations	N/A	0	0
N/A = not applicable			

Operational Impacts. There would be no impacts on public utilities resulting from operation of interim service on the ICS. All public utility impacts relate to construction, as stated above. As to energy usage, because the interim use scenario would not involve any increase in trains, there is no change in existing conditions.

Biological Resources and Jurisdictional Waters

Construction Impacts. The construction impacts on biological resources and jurisdictional waters for the interim use of the ICS are the same or less than as described within Section 3.6 of the Merced to Fresno FEIR/EIS and the Fresno to Bakersfield Revised DEIR/Supplemental DEIS (CHSRA 2012a and 2012b). All impacts to biological resources and jurisdictional waters relate to construction of the HST infrastructure (e.g., filling of wetlands; removal of habitat, etc.), which is no different for Amtrak ICS service. Interim service impacts on biological resources and jurisdictional waters would not differ from the full HST impacts disclosed in the Merced to Fresno and Fresno to Bakersfield environmental documents (the impacts would be less because of the shorter ICS distance). Biological and jurisdictional waters impacts are related to the construction footprint. For completeness, however, those footprint impacts for the ICS are discussed below.

Impacts to Habitats. The habitats impacted by the ICS are listed below in Table 2F-3. Section 3.7 of the Merced to Fresno FEIR/EIS and the Fresno to Bakersfield FEIR/EIS (CHSRA 2012a and 2014) provide descriptions of these habitats and the special-status plant and wildlife species that use them including San Joaquin kit fox, blunt-nosed leopard lizard, Tipton kangaroo rats, valley elderberry long-horn beetle, vernal pool fairy shrimp, California tiger salamander, and Swainson's hawk. The area of each terrestrial habitat type impacted by the project along the approximately 120-mile long ICS is also provided in Table 2F-3. The nature and magnitude of these impacts would be same for a non-electrified train as the HST. These impacts and mitigation measures for the impacts determined to be significant are provided in Section 3.7 of the Merced to Fresno and the Fresno to Bakersfield environmental documents.

Table 2F-3
ICS Impacts on Terrestrial Wildlife Habitat Types

Community Type	Impact Acreage
Barren (BAR)	163.72
Urban (URB)	44.39
Agricultural Lands	4519.57
Annual Grassland (AGS)	331.30
Alkali Desert Scrub (ASC)	7.68
Pasture (PAS)	44.63

Habitats of Concern. Habitats of concern include special–status plant communities, critical habitat for protected species, essential fish habitat and conservation areas. There is no critical habitat for protected species or essential fish habitat within the ICS study area. The acreage of habitat for special-status plant communities impacted by the ICS is provided in Table 2F-4.

Table 2F-4
ICS Impacts on Special-Status Plant Communities

Special-Status Plant Communities	Impact Acreage
Riparian Areas	4.90
Iodine bush scrub	2.90
Bush seepweed scrub	2.18
Saltgrass flats	3.26
Black willow thickets	2.49
Potential habitat for special-status plant species	484.34

Conservation areas include Recovery Plans for federally listed species, conservation easements, public lands, conservation banks, and HCPs. The following conservation areas would be affected by ICS construction. Impacts to these conservation areas have been discussed adequately within Sections 3.7 of the Merced-Fresno FEIR/ EIS and the Fresno- Bakersfield DEIR/EIS (CHSRA 2012a and 2012b):

- Camp Pashayan
- Recovery Plans for Federally Listed Species
- Atwell Island Land Retirement Demonstration Project
- Allensworth Ecological Reserve

Some types of wetlands and jurisdictional water would be affected by ICS construction. Table 2F-5 provides the acreages of the various jurisdictional water types that would be directly impacted by construction of the ICS. The nature and magnitude of these impacts would be same for a non-electrified train as the HST. These impacts and mitigation measures for the impacts determined

to be significant are provided in Section 3.7 of the Merced to Fresno FEIR/EIS and the Fresno to Bakersfield FEIR/EIS (CHSRA 2012a and 2014).

Table 2F-5
ICS Impacts on Wetlands and Jurisdictional Waters

Special-Status Plant Communities	Impact Acreage
Canals/Ditches/Constructed Watercourse	67.58
Emergent Wetland	0.01
Lacustrine/Constructed Basin	56.81
Seasonal Riverine/Natural Watercourse	4.36
Seasonal wetland	1.81
Vernal pools and swales	1.10
Open Water	67.58

Migratory Corridors for Wildlife. The general wildlife linkages that would be crossed by the ICS are:

- Kings River linkage (connectivity choke-point linkage)
- St. John's River–Cross Creek linkage (landscape linkage)
- SR 43/SR 155 linkage (missing linkage)
- Tule River linkage (connectivity choke-point linkage)
- Deer Creek–Sand Ridge linkage (connectivity choke-point/missing linkage)
- Poso Creek linkage (missing linkage)

To avoid impacts to these wildlife linkages, crossing structures dedicated to facilitating wildlife movement would be included in the design of the ICS where appropriate, as discussed in the Merced to Fresno FEIR/EIS and the Fresno to Bakersfield FEIR/EIS (CHSRA 2012a and 2014). Wildlife crossing opportunities would be available through a variety of engineered structures, including dedicated wildlife crossing structures, elevated structures, bridges over riparian corridors, road overcrossings and undercrossings, and drainage facilities (i.e., large-diameter [60- to 120-inch] culverts and paired 30-inch culverts). These wildlife crossings would be the same for interim non-electrified service as for the HST.

Operational Impacts. As described above, all impacts to biological resources and jurisdictional waters for both HST infrastructure and interim Amtrak service on the ICS relate to construction. There are no operational impacts associated with operation of interim service.

Hydrology and Water Resources

Construction Impacts. Impacts of construction of the ICS on water resources would be the same for non-electrified passenger trains as the HST because the impacts are footprint related from the HST track and facilities construction which would be the same or less under the interim use options than for the full HST system evaluated in the Merced to Fresno and Fresno to Bakersfield EIR/EIS. Those impacts are analyzed in Sections 3.8 of the Merced to Fresno and Fresno to Bakersfield environmental documents. The following major watercourses would be crossed by the ICS:

- Schmidt Creek

- Fresno River
- Cottonwood Creek
- San Joaquin River
- Cole Slough (part of Kings River complex)
- Dutch John Cut (part of Kings River complex)
- Kings River
- Cross Creek (Kaweah River, below Lake Kaweah)
- Tule River (below Lake Success)
- Poso Creek
- Deer Creek

Direct impacts on surface water from construction of the ICS would include changes to the hydrology and connectivity of natural water bodies in the study area. Water-body crossings would require bridge abutments on banks, support piers in the water channel, or box culverts at the channel. Bridge components could obstruct the ability of the water body to convey peak flows by reducing its channel capacity and possibly by raising flood elevations locally. However, culverts would be installed to maintain or provide greater hydraulic conveyance capacity of the existing canal, ditch, or adjacent culvert.

Operational Impacts. There would be no impacts to hydrology and water resources resulting from operation of the interim Amtrak service on the ICS.

Geology, Soils and Seismicity

Impacts of construction and operations of the ICS on geologic resources and soils, and the effects of geologic hazards would be the same for non-electrified passenger trains as the HST. Those impacts are analyzed in Sections 3.9 of the Merced to Fresno and Fresno to Bakersfield environmental documents. The impacts in this resource area all relate to construction of the HST infrastructure which is the same (or less because of the shorter length) for the ICS scenario. There are no impacts to geologic resources and soils resulting from operations.

Hazardous Materials and Wastes

Construction Impacts. Potential construction impacts to hazardous materials and waste are linear in nature and tied to amount and length of construction. Therefore, the potential impacts of the construction of the ICS would be less than the construction impacts as described within Section 3.10 of the Merced to Fresno and Fresno to Bakersfield environmental documents. Construction of the ICS would affect 28 medium-risk and 19 high-risk sites of potential environmental concern (PEC). Standard best management practices (BMPs) and avoidance measures would be incorporated during design and construction of the ICS, in coordination with regulatory agencies. PEC sites would also be further investigated as necessary before right-of way acquisition and would be remediated to the extent necessary before ICS construction.

The construction of the ICS would also result in a temporary increase in the transportation, use, and storage of hazardous materials. Cleanup of PEC sites and demolition of existing structures, if needed, would result in a temporary increase in waste disposal. The project could also encounter unknown hazardous materials during construction. Routine transport, use, storage, and disposal of hazardous materials are governed by numerous laws, regulations, and ordinances. The anticipated routine use and disposal of hazardous materials and wastes during construction and the potential for accidental releases would be similar (but reduced) for the ICS as described within Section 3.10 of the Merced to Fresno FEIR/EIS and the Fresno to Bakersfield FEIR/EIS (CHSRA 2012a and 2014).

Operational Impacts. A non-electrified passenger train would carry diesel fuel that could spill in the event of an accidental derailment. However, the use of non-electrified passenger trains on the ICS would not change the number of diesel trains operating in the San Joaquin Valley, it simply shifts the location of some of those trains from the BNSF Railway to the HST tracks. Where the HST tracks diverge from the BNSF Railway, they cross the same water courses and the same types of land uses as the BNSF; therefore, the nature of impacts associated with accidental spills would be the same for non-electrified passenger train service on the ICS as for existing Amtrak service. It is reasonable to anticipate that the potential for accidental diesel spills would be less for a diesel train operating on the ICS than existing Amtrak operations for a two reasons. First, based on a review of FRA rail accident statistics, a major cause of train accidents is collisions with vehicles at at-grade crossings. The potential for such accidents would be eliminated with the ICS as the tracks would be fully grade separated. Second, Amtrak currently operates on freight rail tracks that are not built or maintained to the same standards as HST tracks. Therefore, derailments caused by poor track conditions are less likely to occur on the ICS than existing freight rail tracks.

Safety and Security

Construction Impacts. The construction related impacts for safety and security for interim service are the same impacts as disclosed in the Merced Fresno and Fresno Bakersfield EIR/EIS documents for the HST infrastructure. See sections 3.11 of the Merced to Fresno FEIR/EIS and the Fresno to Bakersfield FEIR/EIS (CHSRA 2012a and 2014).

Operations Impacts. The safety and security operation impacts for a non-electric train service on the ICS would be less than the current impacts of the existing San Joaquin service. The existing San Joaquin service does not run on a fully grade-separated, dedicated track. Shifting five of those daily trains to the ICS would increase safety and security as compared to existing conditions by providing the added safety of a fully grade-separated, dedicated track. Operating on a fully grade-separated, dedicated track, the ICS would provide a safe and reliable means of travel on non-electrified trains between Madera and Bakersfield. Design of the system also would prevent conflicts with other trains, vehicles, pedestrians, and bicyclists and allow the trains to operate year-round under different weather conditions. Since no HMF sites or stations would be constructed for the ICS, there would be very little, if any, potential increases in emergency service demands.

An existing rail system similar to the operation of a high speed diesel train on the ICS is the InterCity 125 system in Great Britain, which has a maximum operating speed of approximately 125 mph. This train was introduced on several major British rail lines in 1976 and remains in service today, although it is expected to be replaced over the next decade with electric trains (Barnett 1992 and Hammond 2011). While ridership numbers for InterCity125 are not readily available, the InterCity 125 is a widely used service and forms the backbone of express service on several British rail lines. Over the three decades that the InterCity 125 has operated, there have been three major accidents that have resulted in deaths and injuries. Two of the accidents (Southall in 1997 and Ladbroke Grove in 1999) involved the collision of trains traveling in different directions on the same track and one (Ufton Nervet in 2004) involving the collision of a train with an automobile at an at-grade crossing. These situations would not occur on the ICS for the following reasons: a) different signal systems are anticipated to be used; b) the ICS will be a fully grade separated system; and c) federally mandated train control systems remove the likelihood of head to head collisions.

Socioeconomics

Construction Impacts. As the ICS would require building the same infrastructure as the HST System, construction impacts would be the same as described in the environmental documents

for the Merced to Fresno and Fresno to Bakersfield sections (CHSRA 2012a and 2014). ICS construction would affect property tax revenues by converting private land to public uses, but these reduced tax revenues would be offset by the increase in sales tax revenues due to project spending.

Operational Impacts. The operational impacts from ICS non-electrified passenger train operations would be less than for HST operations. The effects on property and sales tax revenues would be similar because the same residential, commercial, and agricultural business relocations would be required. The biggest difference lies in station construction; no stations would be built for the ICS. In addition, only a few maintenance jobs would be created for operation of the *San Joaquin* service along the ICS leading to very limited job-creation. Mobility would be enhanced between Madera and Bakersfield but is not likely to induce growth or create economic benefits.

Station Planning, Land Use, and Development

Impacts to land use would be no different than as disclosed in the Merced Fresno and Fresno Bakersfield EIR/EIS documents for the HST infrastructure. Nothing about operation of a diesel train on the HST infrastructure for an interim period, if it occurs at all, has greater impacts to land use. Table 2F-6 identifies the acreages for various land uses that would be temporarily and permanently impacted by ICS construction, respectively.

Table 2F-6
ICS Construction and Operational Land Use Impacts

Type	Permanent Impacts (Acres)	Temporary Impacts (Acres)
Agricultural	3223.9	1584.7
Commercial	73.8	33.6
Industrial	226.4	117.3
Public*	276.6	45.7
Residential Multi-family	51.4	16.0
Residential Single Family	113.6	17.0
Right-of-Way	21.9	3.6
Vacant	120.0	78.5
Uncategorized	362.9	65.7
Total	**4470.4**	**1962.2**
* Includes Parks and Open Space		

Agricultural Lands

Construction Impacts. The total acreages of important farmland that would be impacted by the ICS project footprint are listed in Table 2F-7. ICS construction and operation would permanently convert 3,426 acres of Important Farmland to nonagricultural us, which falls within the impacts evaluated in the Merced to Fresno and Fresno to Bakersfield environmental documents. Section 3.14 of the Merced to Fresno FEIR/ EIS and the Fresno to Bakersfield FEIR/EIS (CHSRA 2012a

and 2014) describes mitigation measures that would be implemented in order to compensate for the severity of this impact in the region.

Table 2F-7
ICS Impacts on Agricultural Lands

Type	Permanent Impacts (Acres)	Temporary Impacts (Acres)
Farmland of Local Importance	166.8	7.4
Farmland of Statewide Importance	1316.9	819.1
Grazing Land	189.2	10.7
Prime Farmland	1372.9	703.0
Unique Farmland	380.6	50.8
Total	**3426.4**	**1591.0**

Operational Impacts. There are impacts to agricultural land resulting from operations of the interim service. Impacts all relate to conversion due to infrastructure construction.

Parks, Recreation, and Open Space

Construction Impacts. The parks, recreation, and open space facilities that would be directly or indirectly impacted by the ICS footprint are listed in Table 2F-8, and are the same as or less than evaluated in Section 3.15 of the Merced-Fresno FEIR/ EIS and the Fresno-Bakersfield Revised DEIR/Supplemental DEIS (CHSRA 2012a and 2012b). No school recreational facilities would be directly or indirectly affected by ICS construction. The construction impacts would be the same as those described in Section 3.15 of the Merced to Fresno FEIR/EIS and the Fresno to Bakersfield FEIR/EIS (CHSRA 2012a and 2014). Temporary and localized construction impacts, including access, noise, dust, and air quality and visual quality degradation, could affect as many as 12 parks. Permanent effects and impacts include the acquisition of park lands. For ICS construction and operation, 0.6 acre of Camp Pashayan would have to be acquired. Mitigation for this significant impact is described in Section 3.15 of the Merced to Fresno FEIR/EIS. Operational characteristics of diesel use of the ICS would not have noise, air quality or other issues or impacts greater than HST use as already evaluated that would negatively affect parks or school recreation facilities.

Table 2F-8
ICS Impacts on Parks and Recreational Resources

Parks, Recreation, or Open Space Facility	Owner	Type of Impact (Direct or Indirect)	Acreage Directly Impacted
Camp Pashayan	Fresno	Direct	0.6
San Joaquin River Parkway	Fresno	Indirect	-
Highway City Neighborhood Community Center	Fresno	Indirect	-
Basin AH1 Dog Park	Fresno	Indirect	-

Table 2F-8
ICS Impacts on Parks and Recreational Resources

Parks, Recreation, or Open Space Facility	Owner	Type of Impact (Direct or Indirect)	Acreage Directly Impacted
Roeding Park	Fresno	Indirect	-
Chukchansi Park	Fresno	Indirect	-
Fulton Mall	Fresno	Indirect	-
Pixley National Wildlife Refuge	USFWS	Indirect	-
Colonel Allensworth State Historic Park	DPR	Indirect	-
Town Square	Shafter	Indirect	-
Stringham Park	Shafter	Indirect	-
Kirschenmann Park	Shafter	Indirect	-

Operations Impacts. Operational characteristics of diesel use of the ICS would not have noise, air quality or other issues or impacts greater than HST use as already evaluated that would negatively affect parks or school recreation facilities.

Aesthetics and Visual Resources

Construction Impacts. ICS construction impacts on aesthetics and visual resources would be the same as for construction of the HST as described within Sections 3.16 of the Merced to Fresno FEIR/EIS and the Fresno to Bakersfield FEIR/EIS (CHSRA 2012a and 2014). These construction impacts would be temporary in nature and relate to sources of light, glare, and visual nuisance, which would be avoided and minimized by construction specifications and practices.

Operational Impacts. Many of the impacts to visual resources from interim service operations along the ICS would result from elevated guideways or roadway overcrossings whose bulk and mass cannot be reduced; these are the same for HST as for ICS because the impacts stem from the infrastructure, not the type of train running on it. Impacts would actually be less than for HST because the ICS would be shorter and would not involve overhead catenary. Table 2F-9 provides a summary of visual quality changes and impacts at key viewpoints (KVP) that would result from the construction and operation of the ICS. These are the same as or less than the impacts evaluated in Section 3.16 of the Merced-Fresno FEIR/ EIS and the Fresno-Bakersfield Revised DEIR/Supplemental DEIS (CHSRA 2012a and 2012b).

Table 2F-9
Summary of Visual Quality Changes and Impacts at Key Viewpoints Along ICS

KVP Location (For Figures, see EIR/EIS for Merced to Fresno and Fresno to Bakersfield)	Visual Quality Rating–Existing	Visual Quality Rating–With Project	Viewer Response	NEPA Impact Intensity	CEQA Impact
Merced to Fresno					
Madera Acres Landscape Unit – Hybrid					
Avenue 18¾ (KVP 27, Figure 3.16-5)	Moderately low	Low	Moderate	Negligible	Less than significant
Madera Acres–SR 99 Landscape Unit – Hybrid					
Avenue 7 (KVP 28, Figure 3.16-6)	Moderately high	Moderate	Low	Negligible	Less than significant
Fresno Landscape Unit – UPRR/SR 99, BNSF, Hybrid Alternatives					
SR 99 (KVP 13, Figure 3.16-6)	Low	Low	Moderate	Negligible	Less than significant
San Joaquin River (KVP 14 , Figure 3.16-6)	Low	Low	Low	Negligible	Less than significant
Camp Pashayan (KVP 15, Figure 3.16-6)	Moderate	Moderately low	Moderate	Moderate	Less than significant
Roeding Park (N Golden State Blvd.) (KVP 16A, Figure 3.16-6)	Moderate	Moderate	High	Negligible	Less than significant
Roeding Park W Olive Ave (KVP 16B, Figure 3.16-6)	Moderate	Moderate	High	Negligible	Less than significant
N Vagedes Avenue (KVP 17, Figure 3.16-6)	Moderately high	Moderately high	Moderate	Negligible	Less than significant
Chukchansi Park (KVP 18, Figure 3.16-6)	Low	Moderately low	Moderate	Negligible (Beneficial)	Less than significant (Beneficial)
Chukchansi Park (KVP 19, Figure 3.16-6)	Low	Moderately low	Moderate	Negligible (Beneficial)	Less than significant (Beneficial)

Table 2F-9
Summary of Visual Quality Changes and Impacts at Key Viewpoints Along ICS

KVP Location (For Figures, see EIR/EIS for Merced to Fresno and Fresno to Bakersfield)	Visual Quality Rating–Existing	Visual Quality Rating–With Project	Viewer Response	NEPA Impact Intensity	CEQA Impact
Fresno to Bakersfield					
Central Fresno Landscape Unit					
Downtown Tulare and H Streets	Moderately low	Moderately high	Moderately high	Beneficial	No impact
Chinatown Mariposa Street G Street	Moderately Low	Moderately high	Moderately high	Beneficial	No impact
San Joaquin Valley Rural/Agricultural Landscape Unit					
Typical Valley Agriculture View (Viewpoint is typical and generic. No specific KVP location.)	Moderate	0.5-mile distance zone: - At-grade: Moderate - Elevated: Moderately low 0.25-mile distance zone: - At-grade: Moderately low - Elevated: Moderately low	Nearby residents: Moderately high Other viewers: Low	Residents in 0.5-mile distance zone: - At-grade segments: Moderate - Elevated segments: Substantial Residents in 0.25-mile distance zone: - At-grade: Substantial - Elevated: Substantial	Residents in 0.5-mile distance zone: - At-grade segments: Less than significant - Elevated segments: Significant Residents in 0.25-mile distance zone: - At-grade: Significant - Elevated: Significant
Typical New Rural Road Overcrossing (Floral Avenue)	Moderate	0.5-mile distance zone: Moderately low	Nearby residents: Moderately high Other viewers: Low	Residents in 0.25-mile distance zone: Substantial Residents outside 0.25-mile distance zone: Moderate	Residents in 0.25-mile distance zone: Significant Residents outside 0.25-mile distance zone: Less than significant

Table 2F-9
Summary of Visual Quality Changes and Impacts at Key Viewpoints Along ICS

KVP Location (For Figures, see EIR/EIS for Merced to Fresno and Fresno to Bakersfield)	**Visual Quality Rating–Existing**	**Visual Quality Rating–With Project**	**Viewer Response**	**NEPA Impact Intensity**	**CEQA Impact**
Typical New Rural Road Overcrossing	Moderate	0.5-mile distance zone: - At-grade: Moderate - Elevated: Moderately low 0.25-mile distance zone: - At-grade: Moderately low - Elevated: Moderately low	Motorists: Low	Moderate	Less than significant
Typical Rural Residential View	Moderately high	0.5-mile distance zone: - At-grade: Moderate - Elevated: Moderately low 0.25-mile distance zone: - At-grade: Moderately low - Elevated: Moderately low	Nearby residents: Moderately high Other viewers: Low	Residents in 0.5-mile distance zone: - At-grade segments: Moderate - Elevated segments: Substantial Residents in 0.25-mile distance zone: - At-grade: Substantial - Elevated: Substantial	Residents in 0.5-mile distance zone: - At-grade segments: Less than significant - Elevated segments: Significant Residents in 0.25-mile distance zone: - At-grade: Significant - Elevated: Significant

Table 2F-9
Summary of Visual Quality Changes and Impacts at Key Viewpoints Along ICS

KVP Location (For Figures, see EIR/EIS for Merced to Fresno and Fresno to Bakersfield)	**Visual Quality Rating–Existing**	**Visual Quality Rating–With Project**	**Viewer Response**	**NEPA Impact Intensity**	**CEQA Impact**
Typical Rural Agro-industrial View	Moderately low	0.5-mile distance zone: - At-grade: Moderately low - Elevated: Moderately low to low 0.25-mile distance zone: - At-grade: Moderately low to low - Elevated: Moderately low to low	Nearby residents: Moderately high Other viewers: Low	Residents in 0.5-mile distance zone: - At-grade segments: Negligible - Elevated segments: Moderate Residents in 0.25-mile distance zone: - At-grade: Moderate - Elevated: Moderate	Residents in 0.5-mile distance zone: - At-grade segments: Less than significant - Elevated segments: Less than significant Residents in 0.25-mile distance zone: - At-grade: Less than significant - Elevated: Less than significant
Colonel Allensworth State Historic Park Landscape Unit					
Colonel Allensworth State Historic Park, looking northwest (see Figure 3.16-16 for KVP location)	High	High	High	Negligible	Less than significant
Rural Town (Wasco, Shafter) Landscape Units					
Downtown Wasco (see Figure 3.16-12 for KVP location)	Moderate	Moderately low	High	Substantial	Significant
Downtown Shafter (see Figure 3.16-14 for KVP location)	Moderate	Moderately low	High	Substantial	Significant
Laton, Mount Whitney Ave. looking east	Moderate	Moderately low	Motorists: Moderate Adjacent residents: High	Motorists: Moderate Adjacent residents: Moderate	Motorists: Less than significant Adjacent residents: Significant

Table 2F-9
Summary of Visual Quality Changes and Impacts at Key Viewpoints Along ICS

KVP Location (For Figures, see EIR/EIS for Merced to Fresno and Fresno to Bakersfield)	Visual Quality Rating–Existing	Visual Quality Rating–With Project	Viewer Response	NEPA Impact Intensity	CEQA Impact
See KVPs 3 through 7 (Viewpoints are typical and representative of similar conditions throughout the landscape unit. No specific KVP location.)	Moderate	0.5-mile distance zone (at-grade): Moderate 0.25-mile distance zone (at-grade): Moderately low	Nearby residents: Moderately high/High Other viewers: Low	Residents in 0.5-mile distance zone: Moderate Residents in 0.25-mile distance zone: Substantial	Residents in 0.5-mile distance zone: Less than significant Residents in 0.25-mile distance zone: Significant

Cultural and Paleontological Resources

Construction Impacts. Construction of the ICS footprint would occur in both urbanized areas and sparsely populated, largely agricultural land outside of regional centers. The ICS footprint would have the greatest potential to affect historic architectural resources in the urbanized areas and the greatest potential to affect undisturbed prehistoric archaeological sites and paleontological localities in rural areas because these areas are less disturbed by development. Twenty-three historic architectural resources would be affected by the ICS, as summarized below in Table 2F-10. For a description of these resources and impacts to these resources, please refer to Section 3.17 of the Merced-Fresno FEIR/ EIS and the Fresno-Bakersfield Revised DEIR/Supplemental DEIS (CHSRA 2012a and 2012b). There are fewer impacts to cultural and paleontological resources than described in the Merced-Fresno FEIR/ EIS and the Fresno-Bakersfield Revised DEIR/Supplemental DEIS (CHSRA 2012a and 2012b) because of the shorter ICS length.

Table 2F-10
Significant Historic Resources Impacted by ICS Construction

APN	Resources Name and Address	City County	Effects (Construction and/or Operation)	CEQA Impact
45002008	Roeding Park[a] 890 W. Belmont Ave	Fresno, Fresno	Adverse Effect – Indirect	Less than Significant with mitigation[b]
No APN	Weber Avenue Overcrossing (Bridge 42C0071)	Fresno, Fresno	Adverse Effect – Direct	Significant and Unavoidable
No APN	Belmont Avenue Subway and Traffic Circle (Bridge 42C0072)	Fresno, Fresno	Adverse Effect - Direct	Significant and Unavoidable
46703038S	Southern Pacific Railroad Depot 1033 H St	Fresno, Fresno	Adverse Effect – Indirect	Less than Significant with mitigation

Table 2F-10
Significant Historic Resources Impacted by ICS Construction

APN	Resources Name and Address	City County	Effects (Construction and/or Operation)	CEQA Impact
46707401	Bank of America 947-951 F St	Fresno, Fresno	Adverse Effect – Indirect	Less than Significant with mitigation
46707101	1528 – 1548 Tulare St	Fresno, Fresno	Substantial Adverse Change – Indirect	Less than Significant with mitigation
46704012S	Pacific Coast Seeded Raisin Company/Del Monte Plant No. 68 1626 Tulare St	Fresno, Fresno	Substantial Adverse Change – Direct	Significant and Unavoidable
46704024S	Hobbs Parsons Produce Building 903-911 H St	Fresno, Fresno	Substantial Adverse Change – Indirect	Less than Significant with mitigation
46707102	Haruji Ego Family Building 956 China Alley	Fresno, Fresno	Substantial Adverse Change – Indirect	Less than Significant with mitigation
46707201	Komoto's Department Store and Hotel 1536-1542 Kern St	Fresno, Fresno	Substantial Adverse Change – Indirect	Less than Significant with mitigation
—	South Van Ness Entrance Gate 2208 S. Van Ness Ave (vicinity)	Fresno, Fresno	Adverse Effect – Indirect	Less than Significant with mitigation
multiple	Washington Irrigated Colony Rural Historic Landscape	Fresno	Adverse Effect – Direct	Significant and Unavoidable
—	Washington Colony Canal (contributor to Washington Irrigated Colony Rural Historic Landscape)	Fresno	Adverse Effect – Direct – Direct effect on canal (Effect on this contributor is an effect on the Washington Irrigated Colony Rural Historic landscape listed above)	Significant and Unavoidable
—	North Branch of Oleander Canal (contributor to Washington Irrigated Colony Rural Historic Landscape)	Fresno	Adverse Effect – Direct – Direct effect on canal, indirect to landscape (Effect on this contributor is an effect on the Washington Irrigated Colony Rural Historic landscape listed above)	Significant and Unavoidable
33511042	7887 S. Maple Ave (contributor to Washington Irrigated Colony Rural Historic Landscape)	Fresno	Adverse Effect – Indirect – Indirect to landscape (Effect on this contributor is an effect on the Washington Irrigated Colony Rural Historic landscape listed above)	Less than Significant with mitigation
33511011	7870 S. Maple Ave (contributor to Washington Irrigated Colony Rural Historic Landscape)	Kings	Adverse Effect – Indirect – Indirect to landscape (Effect on this contributor is an effect on the Washington Irrigated Colony Rural Historic landscape listed above)	Less than Significant with mitigation
—	Peoples Ditch	Kings	Adverse Effect – Direct	Significant and Unavoidable

Table 2F-10
Significant Historic Resources Impacted by ICS Construction

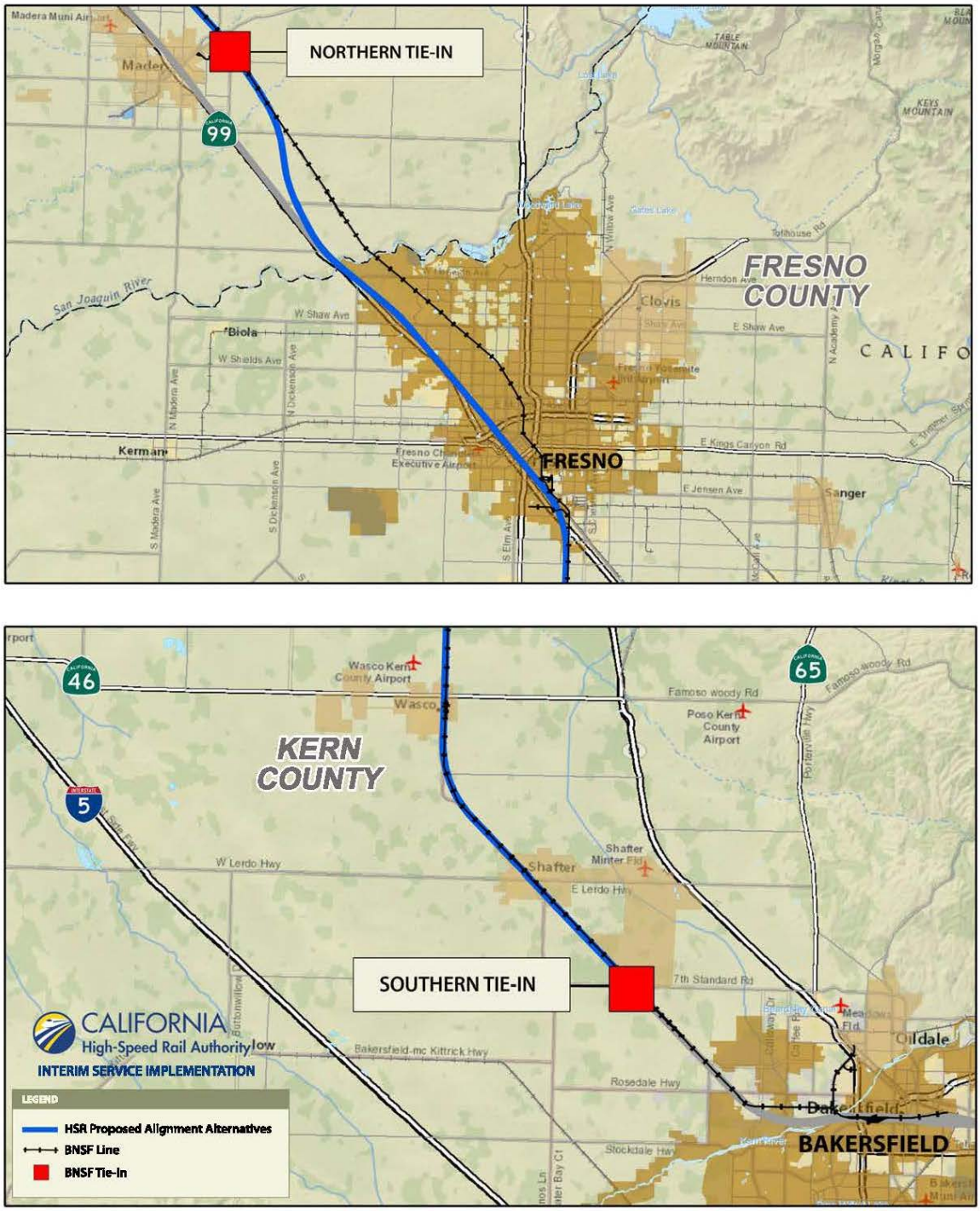
APN	Resources Name and Address	City County	Effects (Construction and/or Operation)	CEQA Impact
028202004000	Lakeside Cemetery Kent Ave	Kings	Adverse Effect – Indirect	Less than Significant with mitigation

[a] Indirect Adverse Effect and Substantial Adverse Change assessments for Roeding Park include impacts for both Construction Activities and Project Impacts. Effects assessments for all other historic properties (Section 106) and historic resources (CEQA) included in the table will only occur during Construction Activities.

[b] It is possible that the City of Fresno would view the projected noise levels as acceptable and preferable to the implementation of mitigation measures. In this case, the impacts on Roeding Park, both as a park and a historic resource, would remain significant under CEQA.

Operational Impacts. Operational characteristics of diesel use of the ICS would not have noise, air quality or other issues or impacts greater than HST use as already evaluated that would adversely affect adjacent or nearby cultural resources.

FIGURE 1


NORTHERN TIE-IN
FRESNO COUNTY
FRESNO
Clovis
Madera Muni Air
Madera
Biola
Kerman
Sanger
San Joaquin River
SOUTHERN TIE-IN
KERN COUNTY
BAKERSFIELD
Wasco
Shafter
Famoso woody Rd
Poso Kern County Airport
Wasco Kern County Airport
Bakersfield-mc Kittrick Hwy
Rosedale Hwy
Stockdale Hwy
7th Standard Rd
W Lerdo Hwy
E Lerdo Hwy
CALIFORNIA High-Speed Rail Authority
INTERIM SERVICE IMPLEMENTATION
LEGEND
HSR Proposed Alignment Alternatives
BNSF Line
BNSF Tie-In

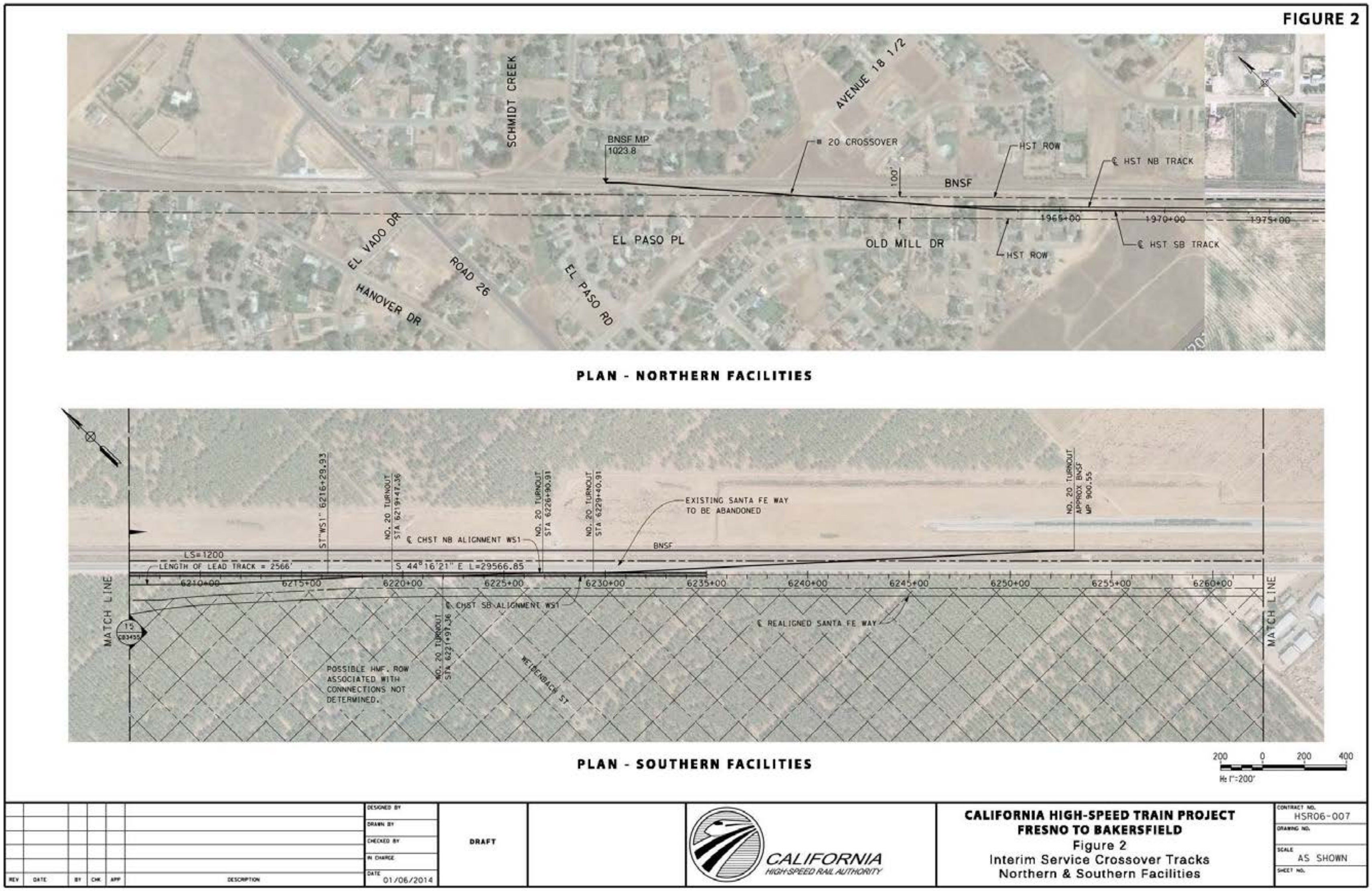


FIGURE 2
SCHMIDT CREEK
AVENUE 18 1/2
BNSF MP 1023.8
20 CROSSOVER
HST ROW
HST NB TRACK
BNSF
100'
1965+00
1970+00
1975+00
HST SB TRACK
EL VADO DR
EL PASO PL
OLD MILL DR
ROAD 26
EL PASO RD
HANOVER DR
PLAN - NORTHERN FACILITIES
MATCH LINE
ST "WS1" 6216+29.93
NO. 20 TURNOUT STA 6219+47.36
NO. 20 TURNOUT STA 6226+90.91
NO. 20 TURNOUT STA 6229+40.91
NO. 20 TURNOUT APPROX BNSF MP 900.55
EXISTING SANTA FE WAY TO BE ABANDONED
CHST NB ALIGNMENT WS1
BNSF
LS=1200
LENGTH OF LEAD TRACK = 2566'
S 44°16'21" E L=29566.85
6210+00
6215+00
6220+00
6225+00
6230+00
6235+00
6240+00
6245+00
6250+00
6255+00
6260+00
CHST SB ALIGNMENT WS1
REALIGNED SANTA FE WAY
NO. 20 TURNOUT STA 6221+97.36
POSSIBLE HMF. ROW ASSOCIATED WITH CONNECTIONS NOT DETERMINED.
WEIDENBACH ST
PLAN - SOUTHERN FACILITIES
200 0 200 400
H: 1"=200'
DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE 01/06/2014
DRAFT
REV DATE BY CHK APP DESCRIPTION
CALIFORNIA HIGH-SPEED RAIL AUTHORITY
CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD
Figure 2
Interim Service Crossover Tracks
Northern & Southern Facilities
CONTRACT NO. HSR06-007
DRAWING NO.
SCALE AS SHOWN
SHEET NO.